

Celebrating ACS's Century Of Environmental Chemistry

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MANY CHEMISTS think that a focus on the nexus between chemistry and the environment began about 50 years ago with Rachel Carson's publication of "Silent Spring." However, this year marks the centennial of one of the American Chemical Society's oldest divisions, the Division of Environmental Chemistry (ENVR). As chair of the Committee on Environmental Improvement (CEI), I would like to recognize our ENVR colleagues on the occasion of their anniversary.

This unit was established in 1914, demonstrating that chemists have long been concerned about the broader societal impact and implications of our work. ACS reinforced its commitment to the environment by establishing an environmental committee in 1952 and journal in 1967.

The name changes that led to the division's current moniker reflect a century of shifting focus for environmental chemistry. In 1914, environmental chemistry was equated with water stewardship. With Edward Bartow—who later became ACS president in 1936—as the founding chair, ENVR was chartered as the Division of Water, Sewage & Sanitation Chemistry. During the next 45 years, members made significant contributions to drinking water purification and wastewater treatment, including improvements to activated sludges, treatment of industrial wastewater, and surveys of drinking water fluoride concentrations.

In 1959, the division's name changed to Water & Waste Chemistry, reflecting a growing recognition of the importance of understanding chemical releases into the environment.

The nation was also becoming more mobile and urbanized, thus increasing concern about air quality. Air chemistry was recognized as an important area of interest during this era through creation of the ACS Committee on Air Pollution—the predecessor of CEI.

The division was already laying the groundwork for an interdisciplinary approach to the environment through extensive collaborations with the committee. In 1964, the division's name changed yet again to Water, Air & Waste Chemistry.

Division members embraced the division's increased scope. They produced technical advances in air monitoring and hazardous waste assessment and more broadly



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investigated chemical transport and transformation in surface water, groundwater, sediment, soil, and air.

Greater understanding of the interactions between anthropogenic chemicals and natural chemical cycles revealed connections between biotic and abiotic processes in the environment. These developments led to the 1973 adoption of the division's current name.

ACS involvement in

these issues was particularly prominent and influential beyond the society during this era. In 1969 and 1977, CEI published two comprehensive reports in an ACS series titled "Cleaning Our Environment." These reports focused on the role of the chemical sciences in identifying and addressing U.S. environmental problems, such as the burning of the Cuyahoga River and choking air pollution in the Los Angeles Basin. These documents contributed to the structure and processes used by the fledgling Environmental Protection Agency to meet a wide range of ecological and health challenges.

Through its multidisciplinary framework, ENVR has contributed to understanding, control, and mitigation of diverse issues related to wastewater and sludge treatment, urban smog, persistent organic pollutants, stratospheric ozone depletion, climate-forcing phenomena associated with atmospheric chemicals that shift gaseous equilibria, and the environmental impact of nanomaterials. ENVR has also provided a fertile collaborative breeding ground for the development and operation of other ACS in-

stitutions that we now take for granted: the ACS Green Chemistry Institute, CEI, and the journal *Environmental Science & Technology* (ES&T). ENVR sponsors the Kenneth G. Hancock Memorial Award in Green Chemistry that is presented each year in Washington, D.C., and cosponsors the ACS Award for Creative Advances in Environmental Science & Technology it created with ES&T.

THE CURRENT DIVISION reflects the ever-expanding complexity of the environmental field, as well as the need to integrate problem solving across various disciplines. Members now play vital roles in scoping environmental stewardship choices and engaging in complex issues involving regional and global chemical processes, removing polluting chemicals from industrial systems, and exploring the interactions of chemicals with living organisms. They have contributed to understanding and mitigating the effect of contaminants and nutrients on environmental quality. Thus, they have paved the way to evaluate chemical distributions, chemical processes, and adverse biological impacts that result from terrorist acts and natural disasters. Climate-forcing chemicals and processes are also emerging as paramount topics in the current discourse of the division.

It is fitting that ENVR will conclude the celebration of its centennial during the ACS national meeting in San Francisco, where the theme is "Chemistry & Global Stewardship." ENVR has arranged a wide-ranging environmental program in cooperation with many other ACS units and the concurrent International Congress of Pesticide Chemistry, hosted by the International Union of Pure & Applied Chemistry.

ENVR is poised for a second century of partnering with numerous ACS committees and divisions to ensure environmental quality while continuing to advance the chemistry that provides more abundant and affordable food, energy, medicine, and other products critical to improving people's lives.

Views expressed on this page are those of the author and not necessarily those of ACS.